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Latin America

Brazilian obesity prevention and control initiatives

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Summary

Obesity prevalence in the Brazilian adult population is 12.5% among men and 16.9% among women. Obesity control has been a subject of concern in Brazilian health policies since the publication of the National Food and Nutrition Policy in 1999. The initiatives include a comprehensive national intersectorial plan for obesity prevention and control focused on confronting its social and environmental causes, development of a food and nutrition education framework aimed at intersectorial public policies in the food and nutritional security field, promotion and provision of healthy food in school environments (linked to family farming), structuring nutrition actions in primary healthcare in the national healthcare system, promoting community physical activity, food regulation and control, and encouragement of public participation and food control. We conclude that several initiatives have been developed in Brazil to deal with the challenge of implementing an intergovernmental, intersectorial response to reverse the rising overweight and obesity rates. The success of this response will depend on a governance model that promotes joint and integrated action by different sectors and active participation of society to consolidate the actions, places and laws that protect health and promote healthy lifestyles.

Keywords: Brazil, intersectorial action, national programmes, health care. obesity, prevention.

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Introduction

In recent decades, changes have occurred in various sectors of Brazilian society. Brazilian median income has risen, access to health and educational services has improved and the lifestyle of a large part of the population has changed. All of these factors have influenced how Brazilians live, get sick and die, thus impacting health in Brazil (1). Significant achievements in combating poverty and malnutrition (2) have been accompanied by a worsening of other health problems, such as a steady rise in excess weight (overweight and obesity) and non-communicable diseases (NCD), including hypertension and diabetes (3).

In the mid-1970s, only 2.8% of adult men and 7.8% of adult women in Brazil were obese. In 2008–2009, obesity prevalence was 12.5% among men and 16.9% among women. In addition to monitoring obesity prevalence trends, it is necessary to consider the proportion of over-

weight individuals (body mass index between 25 and 30 kilograms per square metre [kg m^{-2}]) in the population, which is 35.0% in Brazil's adult population. Seventy-five million Brazilians have some degree of excess weight, including 5.7 million children aged 5 to 9 years, or one in three children in this age group (4).

Obesity interferes with one's quality of life and is a strong risk factor for developing the NCDs that significantly impact morbidity and mortality rates in Brazil. In 2007, 72% of deaths in the country were attributed to NCDs, and rising rates of diabetes, hypertension and obesity point to the need for action to promote health, prevent exposure to major risk factors and ensure quality long-term care (3). It is estimated that between 2009 and 2011, the total annual cost of hospital admissions and outpatient procedures in Brazil related to chronic diseases associated with excess weight was US$ 2.1 billion. Approximately 10% of this cost was attributed to overweight and obesity (5).

This article describes the initiatives developed by Brazilian government agencies to prevent and control the current epidemic of overweight and obesity in the country, which is recognized as a social problem and one of the faces of food and nutritional insecurity. These initiatives are summarized in Table 1 and detailed in the following sections.

The inclusion of obesity in health, nutrition, food and nutritional security policies

The Brazilian constitution of 1988 recognizes health as a right of citizens and an obligation of the state. Since then the country has had a national healthcare system, the Sistema Único de Saúde (SUS), that is public and free and that seeks to provide universal preventive and curative care through management at several governmental levels (federal, 26 states and 5,570 municipalities) and to provide decentralized healthcare services with community participation in and social control over system decision-making (6).

The issue of obesity has been a concern in Brazilian health policies since the publication in 1999 of the National Food and Nutrition Policy (NFNP), which is integrated with the SUS National Health Policy. The NFNP signalled the challenge of confronting the double burden of nutritional problems in the Brazilian population: on the one hand, child malnutrition (especially stunting in children living in the country's poorest regions and in some population subgroups, such as indigenous children) and nutritional deficiencies (mainly iron deficiency anemia) and, on the other hand, the emergence of overweight and obesity in all life stages and in all income groups (7). Recognizing obesity as a central challenge for developing health and intersectorial policies, the NFNP anticipated several recommendations that later appeared in the *Global Strategy on Diet, Physical Activity, and Health* published by the World Health Organization (WHO) in 2004 (8).

Updated in 2011, the NFNP currently aims to improve food, nutrition and health conditions for the Brazilian population by promoting appropriate and healthy eating practices, food and nutrition monitoring, and prevention and integral care of diseases related to food and nutrition (9). The NFNP is a technical and policy framework for the Brazilian government's efforts to combat obesity and guarantee the human right to food and health. Its guidelines have materialized into organizational actions to encourage nutritional care in health services (10) and regulatory actions aimed at nutritional labelling, negotiating voluntary agreements to change the nutritional profiles of processed foods, and designing media campaigns and training for health education professionals to create a broad approach to promoting healthy diets and preventing and controlling obesity and its related NCDs (11,12).

In 2011, Brazil's Health Ministry launched the Strategic Action Plan to Tackle NCDs for the period 2011–2022. The plan's list of actions includes health surveillance, promotion of healthy eating and physical activity and integrated care for patients with NCDs (13). Recognizing obesity as an important risk factor for NCDs and as a disease in itself with its own causes and conditions, the ministry sought an effective intersectorial response to confront it.

Building an integrated interdepartmental response to prevent and control obesity

The Brazilian government and the social organizations that provide formal avenues for civil participation in and social control of the Brazilian health and food and nutritional security programmes recognize that obesity results from modern lifestyles, changes in dietary patterns and lack of physical activity (14). They also recognize the need for coordinated action among the various societal sectors involved in food production, distribution, marketing, control, and consumption and the promotion of healthy lifestyles in relation to diet and physical activity.

With this in mind, Brazil has developed a comprehensive national and interdepartmental plan to prevent and control obesity and confront the social and environmental causes of the obesity epidemic. It was developed through the intersectorial coordination of the Interministerial Chamber of Food and Nutritional Security, composed of 19 ministries. This governmental authority is responsible for implementing policy measures and the national food and nutritional security plan, among other duties (15). The plan's specific objectives are to improve the Brazilian population's food consumption patterns, to revalue the consumption of traditional Brazilian foods and regional

Table 1 Brazilian initiatives to prevent and control obesity

Initiatives	Details
The inclusion of obesity prevention and control as a public health priority	Since 1999, overweight and obesity in all life stages and in all social groups are considered, together with child stunting and nutritional deficiencies (mainly iron deficiency anemia), key priorities for the National Food and Nutrition Policy.
Reorienting the actions of food and nutrition education	Since 2012, Brazil has an interministerial public policy framework for dietary and nutritional education. This framework supports the work of the different governmental sectors in their dietary and nutritional education efforts, so they can achieve the maximum possible results within their contexts, mandates and jurisdictions.
Building an integrated interdepartmental response to prevent and control obesity	In 2011, Brazil has developed a comprehensive national and interdepartmental plan to prevent and control obesity and confront the social and environmental causes of the obesity epidemic. The plan's specific objectives are to improve the Brazilian population's food consumption patterns, to revalue the consumption of traditional Brazilian foods and regional culinary preparations, to increase the availability of healthy foods, to promote the use of public transportation and sustainable habits and lifestyles and to organize a comprehensive healthcare system to care for overweight and obese individuals.
Promotion and provision of healthy food in school environments	Brazil's national school lunch programme, the oldest food and nutrition programme in the country and one of the largest school meal programmes in the world, was changed with the purpose to improve the quality of food served in the programme. In 2001, a new regulation established the obligation that at least 70% of the food purchased by the programme should be basic foods. In 2009, a law approved by the Congress has established that at least 30% of the programme budget should be used to purchase fresh foods directly from family farms and their cooperatives.
Comprehensive healthcare model	Brazil has a national health system and most healthy diet promotion and obesity prevention actions occur at the primary health care services. The Family Health Strategy (FHS) was implemented since 1995. In 2008, the family health support nuclei was created – multiprofessional teams (with such professionals as nutritionists, psychologists, physical therapists and physical educators, among others) that support the FHS. Obesity prevention and treatment in primary care involves the food and nutritional surveillance organization; health promotion activities, such as physical exercise and healthy body practices; interdisciplinary care; setting individual goals for overweight patients according to their willingness to change their behaviours; and regular individual and group monitoring. *Food and Nutritional Surveillance System* Brazil has a National Food and Nutritional Surveillance that provide population dietary and nutritional profile data to support. The System is a web-based platform for all primary health centres and family health teams to provide nutritional status monitoring data and food consumption markers. *Healthy Diet Promotion: Food Guidelines* Healthy diet promotion actions are based on recommendations in the two dietary guides published by the Health Ministry, the Food Guide for Children under Two Years of Age published in 2002 and the Food Guide for the Brazilian Population published in 2006.
Promotion of physical activity in the community	In 2011, the Ministry of Health launched the Health Academy Programme that the objective is to promote places for physical activity and health promotion activities. The academies are public places integrated into the healthcare network that offer regular physical exercise combined with the care of multiprofessional health teams. The aim is to fund 4,000 locations throughout Brazil by 2014.
Food regulation and control	In 2006, the government instituted the Brazilian Regulation for the Marketing of Food to Infants and Young Children, which regulates food industry advertising and marketing practices to infants and young children, including baby bottles, nipples and pacifiers. In 2006, Brazil's National Health Surveillance Agency (NHSA) published a proposal to regulate the advertising of foods high in sugar, sodium, saturated fat and transfat. The resolution was challenged in court by representatives of the food industry and was suspended by the general federal attorney despite the commitment of the Health Ministry and the NHSA.
Encouraging participation and social control	Brazilian social policies were built with strong social participation. Currently there are various councils in different fields of government. In respect to confronting obesity, Brazil has two important councils: The National Health Council (CNS) and the National Food and Nutritional Security Council (CONSEA).

culinary preparations, to increase the availability of healthy foods, to promote the use of public transportation and sustainable habits and lifestyles, and to organize a comprehensive healthcare system to care for overweight and obese individuals. To achieve its objectives, the plan is organized into six major areas:

1. *Availability of and access to appropriate and healthy food*: seeks to mitigate and eliminate physical and financial barriers for communities and families to accessing healthy foods and to increase the supply of these foods through institutional purchasing for schools, hospitals, workplaces and other public food programmes.

2. *Education, communication and information*: seeks to develop dietary and nutritional education actions, communication strategies and campaigns to inform, raise awareness and share knowledge and practices that can assist the population in adopting healthier lifestyles.

3. *Promotion of healthy lifestyles in environments and territories*: involves promotion, protection and support for adopting healthy dietary and body practices and physical activity in specific environments, such as at health centres, at workplaces, at schools, at public food service institutions (restaurants and community kitchens) and in the social assistance network (such as senior centres, homeless shelters, etc).

4. *Surveillance of diet, nutrition and physical exercise in the population*: foresees monitoring of nutritional status, food consumption and physical exercise in the Brazilian population through surveys and monitoring of the Brazilian public healthcare system (SUS).

5. *Comprehensive health care for overweight and obese individuals*: involves the organization of a comprehensive healthcare system to prevent and treat obesity that prioritizes primary care services and involves other healthcare locations with greater technological density (specialized medium- and high-complexity services), such as hospitals for more serious obesity cases.

6. *Regulation and control of food quality and safety*: includes measures to regulate food advertising, nutritional labelling and changes in the nutritional profiles of processed foods to reduce sodium, fat and sugar content.

7. A comprehensive model for intersectorial governmental management is being developed that will overcome existing sectorial fragmentation so that programmes will complement one another thus more effectively confront obesity in the country. The following section describes some initiatives developed to implement the Intersectorial Obesity Prevention and Control Plan.

8. Public Policy Framework for Dietary and Nutritional Education

In 2012, the Social Development, Health and Education Ministries partnered to create a public policy framework for dietary and nutritional education. The ministries found a common ground to guide dietary and nutritional education that mainly originates in public action and that includes the various sectors linked to the food production, distribution, supply and consumption processes. Therefore, the framework supports the work of the different governmental sectors in their dietary and nutritional education (DNE) efforts, so they can achieve the maximum possible results within their contexts, mandates and jurisdictions. In this way, the DNE, when integrated with broader development strategies, can contribute to improving the quality of the population's diet (16).

Promotion and provision of healthy food in school environments

Brazil's national school lunch programme, created in 1955, is recognized as the oldest food and nutrition programme in the country and one of the largest school meal programmes in the world, with free and universal service to all students enrolled in the basic education network (preschool, primary school, high school, and youth and adult education) in public and philanthropic schools. By distributing meals during recesses from school activities, the programme teaches good eating habits, supplements students' diets, and improves students' nutritional status and learning capacity.

When the Brazilian school meal programme began, most food was purchased in dehydrated or prepackaged form and was sent to schools to be reconstituted and served to students. Over time, the programme underwent improvements, and in 2001, in an effort to raise the quality of food in schools, the government decreed that at least 70% of the programme's funds must be spent on basic foods, placing value on regional dietary habits. Building on this effort to improve the quality of food served to students, the government aspired to coordinate public spending with healthy diets and family farm production in the interest of promoting local community development. Consequently, lawmakers passed a law (Lei no. 11.947) requiring that municipalities must use at least 30% of their federal school meal funds to purchase food directly from family farms through facilitated management and purchasing mechanisms (17).

Strengthening the relationship with family agriculture fulfills the plan's objective to contribute to the formation of healthy eating habits in addition to meeting students' nutritional needs during school hours. In this way, ensuring access to and experimentation with healthy foods complements other programmes that integrate health promotion into school activities (18).

Another Brazilian initiative in the school environment is the school health programme (SHP). This partnership between the Education and Health Ministries assesses students' health and nutritional status, promotes health and prevents disease through activities that join school professionals with local primary healthcare services (19). Obesity prevention and control in children and youth is a central theme of the SHP, which has mobilized national communication campaigns and health and education teams to develop activities that combine anthropometric assessment with the promotion of healthy diets. In 2012, the programme was implemented in 56,157 schools in 2,495 Brazilian municipalities (44.8% of all municipalities), involving nearly 15,000 family health teams in its activities. The programme serves 8.2 million public school students. In 2013, a process was begun to extend the SHP to all Brazilian municipalities.

Dietary and nutritional actions in primary health care

The Brazilian national health system serves approximately 70% of the Brazilian population or more than 140 million inhabitants. Most healthy diet promotion and obesity prevention actions occur in the primary healthcare environment, which is organized primarily according to the Family Health Strategy (FHS) by teams comprised of a family medical doctor, a nurse, a nurse's assistant and community health agents (who serve families in their homes and strengthen ties with primary healthcare units). To improve the effectiveness of the FHS's actions, a proposal was made in 2008 to create family health support nuclei – multiprofessional teams (with such professionals as nutritionists, psychologists, physical therapists and physical educators, among others) that support the FHS (20).

Obesity prevention and treatment in primary care involves the food and nutritional surveillance (FNS) organization; health promotion activities, such as physical exercise and healthy body practices; interdisciplinary care; setting individual goals for overweight patients according to their willingness to change their behaviours; and regular individual and group monitoring. The SUS healthcare organization that provides care to overweight patients was recently overhauled to establish a comprehensive healthcare process that prioritizes primary care and involves other healthcare locations with higher technological density (medium- and high-complexity specialized services), such as hospitals, for more serious obesity cases (21).

Food and nutritional surveillance

FNS, an essential activity within the SUS, consists of epidemiological surveillance strategies that provide population dietary and nutritional profile data to support policy decisions aimed at improving the health situation. In primary care, FNS is a series of actions that support the different information systems available through the SUS, the main system being the National Food and Nutritional Surveillance System (NFNSS). Information provided by the NFNSS supports the planning, monitoring and assessment of policies and programmes dealing with diet and nutrition in the primary healthcare sphere (22).

In January 2008, the Brazilian National Food and Nutrition Surveillance System implemented a web-based platform for all primary health centres and family health teams to provide nutritional status monitoring data and food consumption markers for SUS primary care patients. Anthropometric indicators and food consumption can be recorded for people in all life stages: children, adolescents, adults, seniors and pregnant women. Currently, the NFNSS records the anthropometric data of approximately 70% of the 10 million families who participate in the Family Grant Programme and are monitored by the health teams.

Healthy diet promotion: food guidelines

Healthy diet promotion actions are based on recommendations in the two dietary guides published by the Health Ministry, the *Food Guide for Children under Two Years of Age* (23) and the *Food Guide for the Brazilian Population* (24). Based on these guides, specific messages were adapted for each life stage through a dietary and nutritional education tool called the Ten Steps to Healthy Eating.

The *Food Guide for the Brazilian Population*, published in 2006, presents healthy eating guidelines with specific messages directed to the public, health professionals, families, the government and industry (24). In 2012, a revision was begun to incorporate new paradigms from the nutrition science field, such as the distinction between foods and food products and, among food products, the distinction between culinary ingredients and ready-to-consume products, and also the need to understand dietary practices in the context of the food system (25–27).

Dietary practices during a child's first years, which include exclusive breast-feeding until the sixth month of life and healthy and appropriate complementary feeding, are fundamental to forming eating habits that impact subsequent consumption patterns and health status (28). To promote the healthy feeding of children under 2 years of age following the *Food Guide for Children under Two years of age*, the Health Ministry (in partnership with city and state health departments) routinely offers training for health professionals in dietary counselling. This effort seeks to increase breastfeeding rates and improve dietary and nutritional indicators for children of this age. This strategy, called Breast-feed and Feed Brazil, involves a 30-h workshop that uses a critical-reflexive methodology focused on practical experience and problem solving. Tutors are trained to support public health centre activities and pass on their dietary counselling knowledge to other primary care professionals. Since 2008, more than 4,000 tutors and 5,000 health professionals who work directly with public health services have been trained about feeding children up to 2 years of age.

Promotion of physical activity in the community

The lack of regular physical activity is considered a primary and independent risk factor for many health problems, especially cardiovascular and metabolic diseases that are directly related to obesity (29). To support healthy body practices, physical exercise and recreation in the community, the SUS's primary care health promotion efforts have

emphasized building infrastructure in parks, squares and streets near public health centres that includes equipment and qualified professionals to guide the public in appropriate physical activities. The municipal health departments have led these initiatives in some Brazilian cities (30).

The so-called health academies are public places integrated into the healthcare network that offer regular physical exercise combined with the care of multiprofessional health teams mainly to the more vulnerable populations that have limited access to other public exercise equipment. In response to positive local experiences, the Health Ministry expanded this healthcare model to the entire country in 2011 through the Health Academy Programme, aiming to fund 4,000 locations throughout Brazil by 2014.

Food regulation and control

In 2006, the government instituted the Brazilian Regulation for the Marketing of Food to Infants and Young Children, which regulates food industry advertising and marketing practices to infants and young children, including baby bottles, nipples and pacifiers, to avoid aggressive and unethical approaches (31). In 2010, the member states of the WHO approved recommendations regarding food and beverage marketing to children, recognizing the marketing of unhealthy foods to children as a contributing factor to rising overweight and obesity levels in this population (32). With similar purpose to the WHO resolution, Brazil's National Health Surveillance Agency (NHSA) published a proposal in 2006 to regulate the advertising of foods high in sugar, sodium, saturated fat and transfat in the form of a public consultation. The agency formed a working group to present proposals on the subject, which led to the publication of a document that was submitted for public review and resulted in 254 regulations. The public hearing to present these regulations was held in August 2009 (with strong participation of civil society groups, members of the academic community and representatives of the food retailers, manufacturers and media marketing groups involved), and the final text was published on 15 June 2012 (33).

This health resolution deals with supply, advertising, marketing, information and other related practices in the commercial distribution and promotion of foods with high sugar, saturated fat, trans fat, and sodium content and drinks of low nutritional value. The resolution aimed to ensure access to health information for all to curb excessive practices that lead the public (especially children) to adopt eating habits that are incompatible with health and infringe upon their right to an appropriate diet. The resolution was challenged in court by several lawsuits opened by different sectors and associations (most of which related to the food industry) and was suspended by the federal attorney general despite the commitment of the Health Ministry and the NHSA (supported by social control representatives, such as consumer associations and universities). The main allegations questioned the methodology to characterize the nutritional profile (based on amount of nutrients) and the normative authority of NHSA to propose the regulation (among others, was alleged that a bill or a constitutional amendment referring to this subject had to be approved before NHSA could establish regulations). The Brazilian experience regarding the regulation of food advertising to children points to the need to build a broad political consensus on this subject among the government's executive, legislative and judicial branches along with social support and acceptance.

Encouraging participation and social control

The effective participation of social movements and organizations has greatly contributed to Brazil's diet and nutrition agenda. This active role in formulating, managing, implementing and controlling public policies has grown in Brazil since the 1980s with the strengthening of formal dialogue between the government and civil society (34).

Social participation is one of the basic principles laid out in the Organic Health Law and the Organic Food and Nutritional Security Law that guide the national public health care system (SUS) and the Food and Nutritional Security System. The National Health Council (CNS) is the consultative and deliberative body linked with the SUS, and the National Food and Nutritional Security Council (CONSEA) is the president's consultative body for actions related to the Food and Nutrition Security. Both councils work within all Brazilian jurisdictions (federal, state and municipal) and have defined powers and regulated operations (35). They are composed of government and social entities and are represented by non-governmental organizations; professional associations; and consumer defence, human rights, minority rights and environmental organizations, among others. They provide a voice and political power for the concerns and priorities of civil society (36). The main topics discussed by these bodies include family farming; school meals; FNS; healthy diet promotion; special dietary needs; and food and nutritional security for traditional, indigenous, and former slave peoples and communities (34). Their forums have treated obesity as a social problem, discussing it regularly in recent years. Of note is the Healthy Diet Recommendation, which included the regulation of food advertising to children by the CNS in 2010 and more recently the formal approval of the Intersectorial Obesity Prevention and Control Plan issued by the president through CONSEA.

Conclusion

Several initiatives have been developed in Brazil to deal with the challenge of implementing an intergovernmental

and intersectorial response to reverse the rising overweight and obesity rates and reduce their impact on the population's disease burden and quality of life. The response's success will depend on a governance model that promotes joint and integrated initiatives by different sectors and active participation by civil society to consolidate the actions, locations and laws that protect health and promote healthy lifestyles.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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